

REMARKS/ARGUMENTS

FINAL ACTION

Claim Objections

2. Claim 25 has been amended to remove the informalities in the claim.

Claim Rejections – 35 USC §112

- 3-6. Claims 29 and 36 have been amended to comply with the requirements of 35 USC 112.

Claim Rejections – 35 USC §103

The test of obviousness is whether the claimed invention as a whole, in light of all the teachings of the reference in its entirety, would have been obvious to a person of ordinary skill in the art at the time that the invention was made. Connell v. Sears, Roebuck & Co., 220 USPQ 193, 199 (Fed. Cir. 1983). Obviousness is not shown simply by showing that all elements of the claimed invention existed somewhere in the prior art. Litton Sys. Inc. v. Whirlpool Corp., 221 USPQ 97, 109 (Fed. Cir. 1984). To render the claimed invention obvious, the prior art must suggest to combine those elements, as combined in the claim. It must suggest also a practical motivation (desirability) to make the combination based upon the qualities which the combination is expected to provide. In re Newell, 13 USPQ 2d 1248, 1250 (Fed. Cir. 1989).

8. The Examiner's presumption that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made, is correct.
9. Claims 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard (US Patent No. 4,574,971) in view of Wood et al. (US Patent 5,928,745). Claim 26 has been canceled and the rejection against this claim is now moot. The rejection of Claim 25 is respectfully traversed for the following reasons.

The Office Action states on Page 4, second full paragraph:

“Leonard discloses the patch may be made of any suitable plastic material with sufficient structural integrity (column 6, lines 35-59), however does not specifically disclose a multilayer plastic laminate as claimed. It is generally well known in the repair art to provide a repair patch of similar materials for forming the structure itself. It is also well known in the fuel tank art to form a fuel tank wall of a plastic material where the plastic is a multilayer laminate of a low energy surface material and a polymer having a fuel barrier property. For example, Wood discloses It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of repairing a fuel tank with a plastic patch as shown by Leonard with known materials for forming fuel tanks to form the plastic patch as it

is well known in the repair art to form patches of known materials for the structure to be repaired and as the particular layers are known for forming fuel tank walls as shown by Wood...” (Underlining added for emphasis.)

The primary reference cited here is Leonard and the secondary reference is Wood et al. (hereinafter Wood).

Leonard (US Patent No. 4,574,971) discloses sealing devices for repairing steel fuel tanks having rust holes. (Col. 1, Lines 13-39). Leonard does not teach a fuel tank structure made of a multilayer plastic laminate. Plastic laminates do not develop rust holes. The structure repaired by Leonard is made of steel. Since Leonard’s structure is made of steel and not of a multilayer plastic laminate, the well known practice in the repair art to form patches of known materials for the structure to be repaired would not lead a person of ordinary skill in the art to replace the retainer plate used by Leonard with a patch made of a multilayer plastic laminate as required in Claim 25.

Wood, the secondary reference, does not disclose a method for repairing fuel tanks and does not disclose a patch made of a multilayer plastic laminate. Wood does not have any suggestion to combine its teachings with Leonard’s teachings. Wood does not suggest a practical motivation (desirability) to replace the retainer plate of Leonard with a patch made of a multilayer plastic laminate as required in Claim 25.

At the time of Leonard's patent (1986) applicants believe that all the fuel tanks were made out of metal, and know that none of them were made out of multi-layer plastics. As part of the assembly, Leonard uses a screw and nut combination as part of his design. He does mention that a plastic can be used as the patch; however, the metal screw and nut are still a part of the assembly. This is fine when the fuel tanks are made out of metal; however, using metal pieces as part of the assembly undermines the point of using plastic fuel tanks that do not undergo corrosion.

In view of the above, Applicants submit that Claim 25 is patentable under 35 U.S.C. 103(a) over Leonard (US Patent No. 4,574,971) in view of Wood et al. (US Patent No. 5,928,745).

The above rejection of Claim 25 as it would apply to new Claim 46 is respectfully traversed for the following reasons.

The above remarks/arguments relating to Leonard and Wood are applicable here. In addition, unlike the method recited in new Claim 46, the method disclosed by Leonard is

complicated and involves at least six time-consuming steps (Col. 2, Line 57 to Col. 3, Line 38) which are as follows:

1. providing a retainer plate in the form of a large flat washer
2. inserting a machine screw or other force applying device through a hole in the central portion of the retainer plate
3. threading a stop assembly having pivotal stop wings that are movable between collapsed and expanded positions onto the screw member and collapsing it to a position enabling it to be inserted through the enlarged hole in the tank or vessel
4. manipulating the stop assembly so as to open the pivotal stop wings to a position where the stop wings will engage the inner surface of the tank or vessel
5. applying a quantity of polymer sealing material to the cleaned outer surface of the tank around the enlarged hole and
6. rotating the screw to draw the stop assembly and retainer plate toward one another, thereby entrapping a layer of polymer sealing material between the retainer plate and the outer wall surface of the tank.

The method for repairing fuel tanks as recited in new Claim 46 does not include the above steps of the method of Leonard. The method recited in Claim 46 consists essentially of the following steps:

- (a) providing a fuel tank having a surface with a detected leak,
- (b) providing a patch or plug having a surface to be attached to the fuel tank surface with a detected leak, the patch or plug comprising a multilayer laminate structure having one or more layers of a low energy surface material and one or more layers of a polymer having a fuel barrier property,
- (c) coating the tank surface and/or the patch or plug surface with an adhesive,
- (d) placing the patch or plug over the detected leak such that the adhesive is sandwiched between the patch or plug surface and the tank surface, and
- (e) pressing the patch or plug against the tank and allowing the adhesive to cure to bond together the patch or plug surface and the tank surface.

Wood does not provide any motivation for a person of ordinary skill in the art to eliminate the above six steps of Leonard to provide a method as recited in new Claim 46.

In view of the above, Applicants submit that new Claim 46 is patentable under 35 U.S.C. 103(a) over Leonard (US Patent No. 4,574,971) in view of Wood et al. (US Patent No. 5,928,745).

10. Claims 27-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard in view of Wood et al. as applied to Claim 25 above, and further in view of Skoultchi et al. (US Patent No. 5,106,928) and/or Zharov et al. (US Patent No. 5,539,070) and/or Pocius et al. (US Patent No. 5,616,796).

The above remarks/arguments relating to Leonard and Wood are applicable here.

As to Claims 27 and 38; 28-33, 39-44; 34; 35 and 45; 36; 37, Skoultchi, Zharov and Pocius, do not supply the missing element in the combined teachings of Leonard and Wood, which is the patch or plug comprising a multilayer laminate structure having one or more layers of a low energy surface material and one or more layers of a polymer having a fuel barrier property.

In view of the above, Applicants submit that Claims 27-45 are patentable under 35 U.S.C. 103(a) over Leonard in view of Wood et al. as applied to Claim 25 above, and further in view of Skoultchi et al. (US Patent No. 5,106,928) and/or Zharov et al. (US Patent No. 5,539,070) and/or Pocius et al. (US Patent No. 5,616,796).

Conclusion

In view of the above amendments and remarks, the claims are now considered to be in condition for allowance and a Notice of Allowance of Claims 25 and 27-46 is respectfully requested.

Respectfully submitted,



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